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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/653,303	09/02/2003	Ming-Dou Ker	252011-1280	2763
24504	7590	07/27/2004	EXAMINER	
THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP 100 GALLERIA PARKWAY, NW STE 1750 ATLANTA, GA 30339-5948			DICKY, THOMAS L	
			ART UNIT	PAPER NUMBER
			2826	

DATE MAILED: 07/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/653,303

Applicant(s)

KER ET AL.

Examiner

Thomas L Dickey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7,8 and 12-16 is/are rejected.
- 7) ☒ Claim(s) 6,9-11 and 17-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Oath/Declaration

1. The oath/declaration filed on 02 September 2003 is acceptable.

Drawings

2. The formal drawings filed on 02 September 2003 are acceptable.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

4. If applicant is aware of any relevant prior art, he/she requested to cite it on form **PTO-1449** in accordance with the guidelines set forth in M.P.E.P. 609.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5,7,8 and 12-16 are rejected under 35 U.S.C. 102(b) as being anticipated by MARIA VERHAEGE et al. (2002/0033507).

Maria Verhaege et al. discloses an ESD protection circuit with high substrate-triggering efficiency comprising a multi-finger-type device having a plurality of finger gates 906, a plurality of finger sources 904, each of which is an emitter of one of a series of parasitic BJTs formed below said finger gates 906, and at least one finger drain 902 coupled to a pad 520; a plurality of voltage drop element resistors R_D formed by a well of a first conductivity in a substrate of a second conductivity, each of which is coupled between one of the finger sources 904 a power line V_{ss} to detect a transient current flowing through one of the finger gates 906; and a plurality of feedback circuits 908 (note figure 8D), each of which is coupled between a base of a first parasitic BJT and an emitter of a second parasitic BJT, and activates the first BJT to bypass ESD current during an ESD event. With regard to claims 2,3,14, Maria Verhaege et al. discloses that the multi-finger-type device of the ESD protection circuit is a multi-finger-type stacked NMOS or PMOS. With regard to claims 4 and 5 Maria Verhaege et al. discloses that one of the finger gates 906 of the ESD protection circuit is coupled to the power line V_{ss} through a resistor. With regard to claims 12,13, Maria Verhaege et al. discloses that each of the feedback circuits of the ESD protection circuit couples the base and a collector of the first parasitic BJT, and a collector of the second parasitic BJT together. With regard to claims 15 and 16 Maria Verhaege et al. discloses an ESD protection cir-

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cuit with high substrate-triggering efficiency formed on a substrate of a second conductivity comprising a guard ring 910 of the second conductivity formed on the substrate as a contact (note the specific disclosure regarding guard ring as contact region, in paragraph 81) region thereof; a plurality of fingers enclosed by the guard ring 910, each of which has a finger source 904 formed by a first doping region 904 of a first conductivity, a finger drain formed by a second doping region 902 of the first conductivity and coupled to a pad 520, a finger gate 906 between the first 904 and second 902 doping region, and a substrate current input node formed by a third doping region of the second conductivity enclosed by the second 902 doping region, wherein the first 904 and second 902 doping region, and the proximate substrate form a parasitic BJT; a plurality of resistors R_D formed by wells of the second conductivity between the first doping region and a fourth doping region coupled to a power line V_{ss} , each of which is coupled between one of the finger sources 904 and the power line; and internal connection circuits 908 (note figure 8D) coupling one of the finger sources 904 to one of the substrate current input nodes to activate a second parasitic BJT by current flowing through a first parasitic BJT and one of the resistors coupled thereto during an ESD event. Note figures 8D, 9, 10, 17A-B, and 19, also paragraphs 78-82 of Maria Verhaege et al.

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Allowable Subject Matter

6. Claims 6,9-11 and 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas L Dickey whose telephone number is 571-272-1913. The examiner can normally be reached on Monday-Thursday 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TLD
07/04


Minhloan Tran
Primary Examiner
Art Unit 2826